



Educational advantage and employability of UK university graduates

Journal:	<i>Higher Education, Skills and Work-Based Learning</i>
Manuscript ID	HESWBL-10-2018-0101.R1
Manuscript Type:	Research Paper
Keywords:	employability, educational advantage, joint honours degrees, POLAR, graduate outcomes, social mobility

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1. Introduction

In the United Kingdom (UK) the vast majority of university students specialise throughout their undergraduate degree and study just one academic subject area at bachelors degree level (UCAS, 2017). This is commonly known in the UK as a single honours degree. This is in contrast to many other university educational systems globally, for example in North America, where students must achieve a breadth of knowledge across several academic disciplines, combined with a depth of knowledge in their major subject. Notwithstanding the emphasis on early specialisation in the UK, nearly all British universities (UCAS, 2016) will actually permit students, if they wish, to study two or even three academic subjects in parallel. These are referred to as joint or combined honours degrees (hereafter referred to simply as 'joint honours degrees'), and would be known as a double major internationally.

Pigden & Moore (2018) has a more detailed account of the characteristics of joint honours degrees in the UK, and other studies in the literature expand on the learning experience of joint honours students (Hodgson, 2011; Pigden, 2016; Pigden & Jegede, 2016; Pigden & Jegede, 2018) and also the combinations of subjects most likely to lead to highly skilled destinations (graduate-level employment or further study) following graduation (Pigden & Moore, 2017).

The focus on the proportion of graduates in highly skilled destinations is important because the proportion of young people (under the age of 30 years) participating in a UK university education continues to rise steadily, and reached 49% by 2015/16 (DfE, 2017a). Whether the UK university system continues to represent efficiency, effectiveness and value for money is the subject of discussion amongst students, parents, educators, the UK Government and leaders of UK universities (Browne, 2010; Universities UK, 2015; Dowling, 2015).

More recently, this continued growth in student numbers is partly due to the removal of the university student number cap in 2015/16 in England, UK, meaning that universities are now free to recruit as many students as they wish without financial penalty. Despite the expansion in participation, the positive median earnings differential between graduates and non-graduates has remained remarkably constant over the period of 2006 – 2017 (DfE, 2017b), with graduate median earnings consistently around £10k more than non-graduate median earnings.

This demonstrates the overall effectiveness of the UK higher education system, from an earnings perspective, but does not necessarily apply evenly across all subjects studied. For example, 'Medicine, mathematics and economics graduates all typically earn at least 30% more than the average graduate, while creative arts graduates earn around 25% less on average' (Belfield et al, 2018). Unfortunately direct earnings data is not available for joint honours graduates.

In England, UK, university students have been charged much higher tuition fees since 2012/13, when annual student fees were trebled to £9000, in response to the Browne Report (2015). This transferred almost the entire cost of tuition onto the students themselves, to be paid for via loans. Furthermore in 2015, government-funded, means-tested maintenance grants, covering the students' cost of living, were also removed and replaced with loans. The outcome of this has been to leave the poorest graduates with an average debt of £57,000 (Belfield et al, 2017).

The UK government and social commentators continue to be concerned with fair access to a university education for disadvantaged groups, particularly given that a university education confers a positive earnings differential on graduates compared with non-graduates. There is an intention to

counteract some of the earnings disadvantage affecting lower socioeconomic groups, compared with those from better-off backgrounds (Belfield et al, 2018). There are however large differences in participation rates across the UK; for example participation, categorised by whether the student had been in receipt of Free School Meals (FSM), varied between 14% (FSM) and 48% (non-FSM) of the population within a single local authority area, Reading, England, in this case (DfE, 2017c).

There is therefore continued political debate on how universities can achieve a more equitable balance of student admission and fair access for all students irrespective of their social characteristics. For example the UK government's Office for Fair Access, safeguards and promotes fair access to higher education by approving and monitoring so called 'access agreements', the approval of which permits individual universities to charge higher tuition fees.

One methodology used to evaluate the fairness of access to UK universities is via the 'Participation Of Local Areas' (POLAR) classification, which aggregates geographical regions across the UK based on the proportion of its young people that participate in higher education. POLAR is used to inform the targeting, and to support the analysis, of widening participation activities designed to increase social mobility amongst low participation groups. POLAR quintile 1 represents the lowest participation areas (most educationally disadvantaged) and POLAR quintile 5 represents the highest participation areas (most educationally advantaged).

The most recent version of the classification is POLAR4. It is based on the combined participation rates of 18 year olds entering university between 2009/10 and 2013/14, and 19 year olds entering university between 2010/11 to 2014/15. This version superseded POLAR3, which is however still used in many current analyses, and which is the proportion of young people entering university by the age of 19 years between 2005/06 and 2010/11. On average, participation rates have increased nationally and POLAR4 is the first POLAR classification to have no geographical areas in the UK with a participation rate of 0% (HESA, 2017).

University admissions profiles in the UK are often not well spread across the POLAR quintiles, potentially indicating a lack of equity in access to some universities. In the 2016/17 statistics recently published by the Higher Education Statistics Agency (HESA, 2018a), Oxford and Cambridge Universities have 2.8% and 3% of their new student admissions respectively from the lowest low-participation neighbourhood (POLAR3 quintile 1).

Among the Russell Group (research-driven universities which are highly selective of their students) more generally, the proportion from POLAR3 quintile 1 is low. For example, University College London, Imperial College, and Durham follow Oxford and Cambridge, with 3.2%, 3.4%, and 4.2% of their new student admissions respectively, from the lowest participation neighbourhood (POLAR3 quintile 1). The University of Liverpool scores the highest among the Russell Group for 2016/17, with 9.7% of their new student admissions from quintile 1. Nationally, 11.4% of new entrants into higher education come from the lowest participation neighbourhoods, as defined by the POLAR3 classification (HESA, 2018a), so the Russell Group are admitting proportionately far fewer students from educationally disadvantaged areas.

Admission to Britain's top universities is a theme of interest in the UK Parliament, and according to a written question to the Department for Education (Evennett, 2018), for 2017 entry, Oxford and Cambridge Universities received 48.5% and 48.3% of their student applications from POLAR3 quintile 5 (most educationally advantaged), with University College London, Imperial College and Durham not far behind with 45.0%, 44.8% and 48.0% of their student applications respectively from POLAR3 quintile 5. On average, the Russell Group received 41.4% of all UK 18 year old student applications from POLAR3 quintile 5.

Higher Education, Skills and Work-Based Learning

Within the UK university sector, so-called ‘Post-92’ universities are typically former vocationally oriented polytechnics that converted to universities shortly after the 1992 expansion of the UK university sector. In a recent report from the Higher Education Policy Institute (Martin, 2018), the Gini index is used to demonstrate how evenly students are distributed across the POLAR3 quintiles at universities in the UK. It is striking to note the clustering at the bottom of the table for the Russell Group, and the top of the table, the universities with the most equitable admissions profiles, is dominated by Post-92 universities.

As a measure of university graduates’ ability to find suitable work, the UK Destination of Leavers from Higher Education (DLHE) survey data, provided by the Higher Education Statistics Agency (HESA), is used to identify the proportion of graduates in a highly skilled destinations (graduate jobs or further study). According to HESA (2018b), analysis of the 2015/16 DLHE dataset shows that POLAR3 quintile 1 graduates have the lowest percentage of graduates in highly skilled employment or further study at 71% of the total, while quintile 5 graduates have the highest proportion of graduates in highly skilled destinations or further study, at 75% of the total. This analysis implies that educational disadvantage, at the national level, persists over the course of a university education and affects the ability of graduates to secure graduate-level employment or go into further study.

The current study sought to build on the previous work of Pigden & Moore (2018) which finds nationally an approximate -3% point negative gap between the proportion of joint honours graduates in highly skilled destinations compared with single honours graduates. Pigden & Moore (2018) find however that both single and joint honours graduates from the Russell Group are more employable compared with the national average and ‘both single and joint honours graduates of the Russell Group exceeded the national average (of graduates in highly skilled destinations) by +9.04% points for single honours and +10.59% points for joint honours’ (Pigden & Moore, 2018) for their respective honours type. Contrasting this, at Post-92 universities, single honours graduates are -8.3% points lower and joint honours graduates -11.9% points lower than the national average for highly skilled destinations for their respective honours type.

Furthermore, Pigden & Moore (2018) find that the gap between the proportion of joint honours graduates in highly skilled destinations compared with single honours graduates is much smaller at the Russell Group, compared with Post-92 universities. At the Russell Group, the gap between single and joint honours graduates is just -1.52% points, but at Post-92 universities the gap is -7.13% points.

The purpose of the current study was to evaluate the highly skilled destination rates of joint honours graduates compared with single honours graduates, and to correlate this with a measure of educational disadvantage, POLAR4 quintiles. By adding in POLAR4 quintile data, the main research question explored in the current study was whether this participation factor correlated with highly skilled destinations for joint honours graduates, who had studied at the Russell Group or Post-92 universities. The intention behind the study was to analyse whether the effects found in Pigden & Moore (2018) whereby the Russell Group joint honours graduates are far more likely to be in highly skilled destinations than their Post-92 university counterparts, and with a much smaller gap, was due, in part, to an association with POLAR4 participation rates.

2. Methodology

The current study specifically built upon the methodology and analysis of highly skilled destinations (either graduate employment or further study) for joint honours graduates used in Pigden & Moore (2017) and Pigden & Moore (2018). In order to identify the proportion of graduates in a highly skilled

destination, the DLHE survey data, provided by HESA, was analysed via a unique, customised dataset incorporating additional, publicly non-published data on the academic subjects studied by the graduate. By analysing the subjects studied, joint honours graduates could be identified analytically. In the generic analyses of DLHE published publicly by HESA, the joint honours graduates are apportioned across the subjects studied, and so cannot be evaluated and scrutinised directly. Therefore the current study provided a mechanism for identifying joint honours graduates and directly exploring their rates of highly skilled destinations, an approach which is not possible in the publicly available DLHE data.

The current study specifically considered the outcomes of full-time undergraduates in the UK and utilised a consistent, analytic approach for analysing the DLHE dataset, as deployed in the previous work of Pigden & Moore (2017, 2018). However in the current study additional social mobility data, namely the POLAR4 quintiles, was included, in order to facilitate an analysis of highly skilled destinations correlated with participation rates.

While Pigden & Moore (2018), comprises the DLHE dataset from academic years 2011/12 to 2014/15, the current study added in a further two years of data and spanned 2011/12 to 2016/17. The additional POLAR4 social mobility data was added for the three most recent years of the survey: 2014/15 to 2016/17. The method for identifying joint honours graduates was via the Joint Academic Coding System (JACS), used by HESA to classify academic subjects.

The customised DLHE dataset used in the current study included up to three JACS principal subjects studied by the graduate, not normally published in the HESA annual analysis of the DLHE survey. Where a degree comprised academic subjects studied from a single JACS subject area then this was deemed a single honours degree, and where the subjects studied were drawn from different JACS subject areas, then these were defined in our study as joint honours degrees.

Pigden & Moore (2018), has further details and the limitations of this approach to defining and identifying joint honours degrees via the DLHE survey data. As in Pigden & Moore (2018), we considered whether graduates had studied at one of the Post-92 universities, or at a Russell Group university, in order to reflect on the differences in graduate outcomes between these two groups of universities.

To analyse the effect of completing a single honours degree compared with directly related joint honours degrees, in most of the analyses 'single honours only' subjects were removed, i.e. academic subjects were removed that did not feature in any of the joint honours degrees in the DLHE dataset, for example JACS B5 Ophthalmics and JACS A4 Clinical Dentistry, see Table 1. The rationale was that the current study sought to establish whether there was an observable impact in studying two or three subjects as a joint honours degree that were also available to study as single honours, i.e. the impact was inherent in this mode of study, rather than in the actual subjects studied.

Table 1 Non-joint honours subjects

So that our study complemented the recent teaching quality assessment of UK universities under the Teaching Excellence Framework (TEF) (Higher Education Funding Council for England, 2017) we used the same criteria for highly skilled employment or further study as defined by the Higher Education Funding Council for England (2015), namely that the definition of highly skilled employment was any occupation within categories 1-3 of the Standard Occupational Classification (Office for National Statistics, 2010). All further study was also considered to be highly skilled and was therefore included wherever highly skilled destinations were referred to.

3. Results

3.1 Proportion of graduates by Honours type in the UK between 2011/12 and 2016/17

The first two tables, Table 2 and Table 3, updated the analysis of Pigden & Moore (2018), with two additional academic years of DLHE data. Using the same definition of a joint honours degree, the analysis of DLHE showed that from 2011/12 to 2015/16, there was a year on year decline in the proportion of graduates with a joint honours degree, compared with the proportion of all single honours graduates (including subjects not available to study as joint honours).

As seen in Table 2, in 2011/12, 10.76% of the total number of graduates had a joint honours degree; this then fell approximately 0.5% points each year, and was down to 8.83% of the total in 2015/16. However in the most recent year of survey data available, 2016/17, there was an increase in the proportion of joint honours graduates, up to 9.16% of the total. This modest 0.33% point increase in the proportion of joint honours graduates was too small to as yet to recommend a review of institutional policy around joint honours, but would be reviewed in subsequent years to check for sustained growth.

Table 2 Proportion of graduates; includes ‘non-joint’ subjects

It was noted that the absolute number, rather than proportion, of all graduates with a joint honours degree had actually increased year on year, albeit at a slower rate than the growth in graduates with a single honours degree. In the UK, as in the rest of the developed and developing world, there had been a ‘massification’ of university participation (Marginson, 2016), with a steady rise in the proportion of the population entering higher education year on year, so it was unsurprising to also see this growth in joint honours numbers.

3.2 Proportion of graduates by Honours type in highly skilled destinations in the UK six months after graduating

Excluding subjects not available to study as part of a joint honours degree (see Table 1), we found that there had been a year on year increase in the proportion of graduates in highly skilled destinations, at the six month point following graduation (the point at which the DLHE survey is administered). For single honours graduates, in 2011/12 just 64.30% had secured a highly skilled destination six months after graduating, but by 2016/17 this had risen to 76.26% of the total. Similarly, joint honours graduates also had a year on year improvement in the proportion in highly skilled destinations, rising from 60.98% of the total in 2011/12 to 73.55% in 2016/17. See Table 3.

Table 3 Proportion of graduates in highly skilled destinations; excludes ‘non-joint’ subjects

Table 3 showed that nationally, graduates with a joint honours degree had a year on year negative gap in the proportion in highly skilled destinations six months after graduating, compared with those who had a single honours degree. This fluctuated slightly from year to year, but was approximately minus 2.99% point points, taken from a straight average of the last three years, the period for which we had POLAR4 data.

However, as previously mentioned, this national averaging masked substantial variation between the Russell Group and Post-92 universities found in Pigden & Moore (2018). To reiterate those findings, at the Russell Group, the gap between the proportion of single and joint honours graduates in highly skilled destinations was much lower at -1.52% points.

However joint honours graduates from Post-92 universities were much less likely to be in highly skilled destinations compared with the proportion of single honours graduates from Post-92 universities. There was a gap of -7.13% points between the respective proportions of graduates from each honours type in highly skilled destinations (Pigden & Moore, 2018). The following analyses sought to explore these gaps further.

3.3 Proportion of graduates by Honours type in highly skilled destinations by POLAR4 quintile

In Table 4 we analysed the proportion of graduates in highly skilled destinations, six months after graduating, by POLAR4 quintiles. Quintile 1 represented the lowest participation regions (most educationally disadvantaged), and quintile 5 represented the highest participation regions (most educationally advantaged). The DLHE data was summed over the three years 2014/15 to 2016/17, in order to smooth any year on year variation in graduate destinations from the respective honours type.

Table 4 Proportion of graduates in highly skilled destinations by POLAR4 quintile; excludes 'non-joint' subjects

Table 4 demonstrated that, averaged across all universities in the UK, there was a trend for both single honours and joint honours graduates from higher participation POLAR4 quintiles to be more likely to be in a highly skilled destination, i.e. the more educationally advantaged, were more likely to be in a highly skilled destination, as a proportion of the total from each honours type. This accorded with HESA (2018b) data, but expanded those findings to include direct consideration of joint honours graduates.

We already knew from Table 3 to expect, for the period 2014/15 to 2016/17, an average -2.99% point gap between the proportion of joint honours graduates in a highly skilled destination compared with single honours graduates; Pigden & Moore (2018) showed that there was a much smaller gap at the Russell Group compared with Post-92 universities. However previous work did not examine whether this gap was consistent across POLAR4 quintiles, and whether the gap varied depending on the level of educational advantage at the point of entry to university.

The difference in the proportion of graduates in highly skilled destinations between joint honours graduates and single honours graduates decreased substantially across the quintiles, with a -5.31% point gap in quintile 1, falling to a -1.97% point gap for quintile 5. In other words, joint honours graduates hailing from the most educationally advantaged regions in the UK had a much smaller, albeit still negative, highly skilled destinations gap compared with single honours graduates.

Table 4 therefore appeared to suggest that the lower quintiles were proportionately contributing less in to the gap between the honours types, otherwise the national gap of -2.99% points would have been higher, given that a straight average of the gap across the POLAR4 quintiles (assuming an equal distribution of graduates) was -3.96% points. This suggestion was tested further on in the analysis in Table 7.

3.4 Proportion in highly skilled destinations of the university population of graduates, by Honours type, by POLAR4 quintile

We looked at the Russell Group (Table 5) and Post-92 universities (Table 6), to analyse whether the observed variation in highly skilled destinations across the POLAR4 quintiles (Table 4) also occurred within these two different groups of university.

Tables 5 and 6 demonstrated that all Russell Group graduates, irrespective of their POLAR4 quintile, were far more likely to be in a highly skilled destination than single or joint honours graduates of Post-92 universities. Even the lowest quintile graduates of the Russell Group had greater rates of highly skilled destination, than the highest quintile from Post-92 universities, for both single and joint honours graduates.

Table 5 Proportion in highly skilled destinations of the Russell Group population of graduates, by Honours type, split by POLAR4 quintile; excludes 'non-joint' subjects

Table 6 Proportion in highly skilled destinations of the Post-92 university population of graduates, by Honours type, split by POLAR4 quintile; excludes 'non-joint' subjects

Interestingly, Tables 5 and 6 also showed that at both the Russell Group and the Post-92 universities there was no trend towards a smaller gap between the honours types for the higher quintiles, as we had observed at the national level over all universities in Table 4. The gap between single honours and joint honours graduates from both the Russell Group and Post-92 universities was fairly uniform across all quintiles, and certainly not decreasing as in Table 4. However the gap between the rates of highly skilled destination between single and joint honours graduates at the Russell Group was much smaller, in every quintile, than the gap at Post-92 universities.

These features seemed to suggest that the pattern found in Table 4 was not only due to a higher proportion of graduates coming from the upper quintiles, but also could be in part because a greater proportion of upper POLAR4 quintile and a smaller proportion of the lower POLAR4 quintile joint honours graduates, compared with single honours, were from the Russell Group. This would magnify the effect of the small Russell Group highly skilled destinations gap between the honours types, found in the highest quintile. We examined this in Table 7.

3.5 Proportion of the overall national single and joint honours population, for each POLAR4 quintile at the Russell Group or Post-92 University

In Table 7 we analysed for each quintile the proportion of single and joint honours graduates, across the national population, from the Russell Group and Post-92 universities, in order to investigate the results found in Figs. 4, 5 and 6. Table 7 showed the proportion from each honours type and quintile only from Russell Group and Post-92; the graduates from other types of university made up the remainder. For example for POLAR 1, 13.30% of single honours came from Russell Group, 67.28% from Post-92's and the remainder of the single honours graduates from POLAR 1 were from other types of university.

Table 7 Proportion in each POLAR4 quintile of the overall national single and joint honours population for that quintile; showing the Russell Group and Post-92 groups of universities only

Table 7 showed that for the highest POLAR4 quintile, the proportion of joint honours graduates was substantially higher at the Russell Group than at Post-92 universities. With 49.42% of the POLAR4 quintile 5 (most educationally advantaged) joint honours graduates coming from the Russell Group and only 26.99% of the quintile 5 joint honours graduates coming from Post-92 universities. In contrast, 33.46% of the quintile 5 single honours graduates came from a Russell Group and 43.89% from Post-92 universities.

Furthermore, in any quintile, there were proportionately more joint honours graduates from the Russell Group, compared with single honours graduates, and increasingly so the higher the quintile. In the Russell Group, the rate of increase in the proportion of joint honours graduates for the higher

quintiles, was faster than the rate of increase in the proportion of single honours graduates in the higher quintiles. These two observations would explain the reducing highly skilled destinations gap found the higher the quintile, in Table 4.

To give a sense of the scale of the different populations, we included in Table 8 a mirror of Table 7, but showing the absolute graduate numbers in each POLAR4 quintiles, for each honours type, at the Russell Group and Post-92 universities.

Table 8 Number in each POLAR4 quintile of the overall national single and joint honours population for that quintile; showing the Russell Group and Post-92 groups of universities only

3.6 Proportion of the respective population within the Russell Group or Post-92 universities, of single or joint honours graduates, split by POLAR4 quintile

In Table 98 we analysed the proportion of graduates split down by POLAR4 quintile who had studied a single or a joint honours degree, within either a Russell Group, a Post-92 university and over all universities. This analysis illustrated several points.

Firstly, over the entire population in all universities, and relative to single honours, there were proportionately fewer joint honours graduates in the lower quintiles, and proportionately more in the upper quintiles. However because Table 7 showed that proportionately more of the joint honours graduates were from the Russell Group, this is why we saw the trend in Table 4, which showed a decreasing gap between single and joint honours graduate rates of highly skilled destinations in the upper quintiles.

Secondly, that the range of participation across the quintiles was much smaller within the Post-92 universities, than within the Russell Group. It was clear that quintile 5 (most educationally advantaged) dominated within the Russell Group, while quintile 1 (most educationally disadvantaged) were highly under-represented in within the Russell Group; this was the case for both single and joint honours.

While this pattern also existed within the Post-92 universities, the spread was much more even and this group of universities had a far more equitable admissions profile compared with the Russell Group. This echoed the data from HESA (2018a) but also demonstrated similar distributions across the POLAR4 quintiles for joint honours as well as single honours graduates.

Table 98 Proportion of graduates from the Russell Group and Post-92 universities by POLAR4 quintile; excludes 'non-joint' subjects

Thirdly, within both groups of universities, the proportion of their single honours graduates was broadly comparable to the proportion of their joint honours graduates, for any particular quintile. However in the Russell Group, ranging between the lowest participation quintile (1) to the highest (5), there was a shift proportionately to a higher proportion of their joint honours graduates, as a fraction of the Russell Group population of joint honours graduates. In other words, the higher up the participation quintile, the more likely were graduates to hold a joint honours degree as a proportion of the Russell Group's entire joint honours population, compared with the likelihood of holding a single honours degree as a proportion of the Russell Group's entire single honours population.

Across the Russell Group, there was a greater likelihood for their joint honours graduates to be from the highest participation, most educationally advantaged, quintile, than the proportion of their single honours graduates from the highest quintile. This was not seen in the Post-92 universities, where comparable proportions of their single and joint honours came from each quintile. A reflection of this point was followed up in the Discussion section, and also as a basis for future work.

3.7 Proportion of the university population of graduates, by Honours type, split by POLAR4 quintile

In order to explore further any relationship between graduates from different groups of university and the POLAR4 quintiles, we analysed whether joint honours graduates were a large part of the university groups' overall populations. This analysis included 'non-joint' subjects, to enable an analysis of the entire set of graduates, irrespective of subject studied.

Table 109 Proportion by Honours type in a university population, by POLAR4 quintile; includes 'non-joint' subjects

Table 109 clearly demonstrated that the higher the quintile (more educationally advantaged), the higher the proportion of joint honours graduates compared with single honours graduates, averaged over all universities in the UK. The educationally advantaged were more likely to have elected to study a joint honours degree as a proportion of that quintile, compared with lower quintiles.

This national finding hid, however, an even more prominent and very interesting difference between the Russell Group and Post-92 universities, shown in Table 110 and Table 121. At the Russell Group (Table 110) the relative proportion of joint honours graduates in any quintile was higher than the national average, and in quintile 5 the proportion of the total Russell Group graduates with a joint honours degree was substantial at 13.49%.

Table 110 Proportion by Honours type in the Russell Group populations, by POLAR4 quintile; includes 'non-joint' subjects

At Post-92 universities (Table 121), there was little variation in the proportion of joint honours graduates, irrespective of their POLAR4 quintile, and overall the proportion relative to single honours at these universities was much lower in every quintile than the national average.

Table 121 Proportion by Honours type in Post-92 universities populations, by POLAR4 quintile; includes 'non-joint' subjects

Tables 9, 10 and 11 demonstrated that the joint honours graduates had had a larger 'footprint' within the Russell Group, compared with at the Post-92 universities, and the higher quintile joint honours graduates even more so. A reflection on this interesting point was included in the Discussion section and also formed in part the proposal for future work.

4. Discussion

Over a long period of expansion in the participation in a university education in the UK, the numbers graduating with a joint honours degree have grown year on year, albeit with a slightly declining overall share of the graduate population (Table 2). The graduates of 2016/17 bucked this trend, with a modest 0.33% point rise in the proportion of all graduates with a joint honours degree. It will be interesting to observe in future years whether this represents a turning point and whether the market share for joint honours continues to grow. In planning their future portfolios, university

leaders may wish to consider the durability of this Honours type, with an eye on the potential for future growth and increase in market share.

Pigden & Moore (2018) found a national, year on year, negative gap between the proportion of joint honours graduates in highly skilled destinations compared with single honours graduates. In the current study, we added a further two years of DLHE survey data to the analysis of Pigden & Moore (2018) and found that the negative gap persisted (Table 3), averaging -2.99% points between the highly skilled destinations rates of the two honours types over the most recent three years of data available (2014/15 to 2016/17).

In seeking to understand this gap better and build on previous published work, in the current study we explored any potential relationship between the POLAR4 classification of participation and the rates of highly skilled destinations, especially in combination with the graduate having studied at the Russell Group or a Post-92 university. The main research question being explored was whether there was a correlation between POLAR4 quintiles and highly skilled destinations, and whether the negative highly skilled gap for joint honours graduates was attributable to particular quintiles, perhaps magnified by the effect of studying at the Russell Group or Post-92 university.

We already knew from Pigden & Moore (2018) that joint honours graduates of the Russell Group were more likely to be in highly skilled destinations than Post-92 university joint honours graduates, and also that the gap between single honours and joint honours graduates was much smaller at the Russell Group than in Post-92 universities. Might categorisation of the graduate by their POLAR4 quintile be correlated with these results for joint honours graduates? We knew already that the Russell Group were overall admitting disproportionately more students from quintile 5 (HESA, 2018a), but not whether upper quintile joint honours graduates were more or less likely to be from the Russell Group. We also knew that nationally the lower quintiles generally had lower rates of highly skilled destination (2018b), but what was the relationship between POLAR4 quintiles and the highly skilled destinations of joint honours graduates?

Table 4 demonstrated that at the national level, there was a trend for both single honours and joint honours graduates from higher participation POLAR4 quintiles to be more likely to be in a highly skilled destination, i.e. the more educationally advantaged were more likely to be in a highly skilled destination. This accorded with HESA (2018b) data, but expanded upon that to include direct consideration of joint honours graduates.

Furthermore, Table 4 showed that joint honours graduates hailing from the most educationally advantaged regions in the UK had a much smaller, albeit still negative, highly skilled destinations gap compared with single honours graduates. We showed that nationally there was a trend towards a smaller highly skilled destinations gap between single honours and joint honours graduates, the higher the level of educational advantage. The smallest gap for quintile 5 and the largest gap for quintile 1.

Tables 5 and 6 demonstrated that all Russell Group graduates, irrespective of their POLAR4 quintile, were far more likely to be in a highly skilled destination than single or joint honours graduates of Post-92 universities. Even the lowest quintile graduates of the Russell Group had greater rates of highly skilled destination, than the highest quintile from Post-92 universities, for both single and joint honours graduates.

However at both the Russell Group (Table 5) and Post-92 universities (Table 6) there was no observable trend as seen in Table 4 towards a smaller highly skilled destination gap for the upper quintiles. The gap between single and joint honours rates of highly skilled destination remained fairly

consistent irrespective of the quintile, and was much larger at Post-92 universities than the Russell Group. So the national trend seen in Table 4 seemed instead to have related to a higher proportion of joint honours graduates in the upper quintiles, combined with a higher proportion also having studied at the Russell Group.

Table 7 did indeed show that the proportion of quintile 5 joint honours graduates from the Russell Group was disproportionately high, and in any quintile, there were proportionately more joint honours graduates from the Russell Group, compared with single honours graduates, and increasingly so the higher the quintile. In the Russell Group, the rate of increase in the proportion of joint honours graduates for the higher quintiles, was faster than the rate of increase in the proportion of single honours graduates in the higher quintiles. These two observations would explain the reducing highly skilled destinations gap found the higher the quintile, in Table 4.

To reiterate, Table 5 and Table 6 showed that at both the Russell Group and Post-92 universities, there was no trend towards a smaller highly skilled destinations gap across the range of POLAR4 quintiles. So although both single and joint honours graduates of both universities were more likely to be in a highly skilled destination the higher their POLAR4 quintile, neither the Russell Group nor Post-92 universities were more or less likely to impact on the relative performance of single or joint honours graduates, for any particular quintile.

We also verified and expanded in Table 98 upon the HESA (2018a) data and showed that the Post-92 universities had a far more equitable admissions profile for both joint and single honours graduates, compared with the Russell Group. This analysis also highlighted that the joint honours graduates from the Russell Group were far more likely to have come from educationally advantaged (quintile 5) regions.

It was interesting to note in Table 109 the increasing proportion of joint honours graduates compared with single honours graduates as educational advantage increased, with POLAR4 quintile 1 having the lowest proportion of joint honours graduates to quintile 5 having the highest proportion, relative to the single honours graduates. This national finding hid, however, an even more prominent difference between the Russell Group and Post-92 universities, shown in Table 110 and Table 112.

At the Russell Group (Table 119), the relative proportion of joint honours graduates in any quintile was higher than the national average, and in quintile 5 the proportion of the Russell Group graduating with joint honours ~~population~~ was substantial at 13.49% of the total population of graduates. At Post-92 universities (Table 121), there was little variation in the proportion of joint honours graduates, irrespective of their POLAR4 quintile, and overall the proportion relative to single honours at these universities was much lower in every quintile, and lower than the national average. Might this particular feature contribute towards the smaller highly skilled destinations gap between single honours and joint honours graduates at the Russell Group, which we were unable to explain in the current study?

Why was the gap between single and joint honours highly skilled destinations so much larger at Post-92 universities than at the Russell Group, as found in Pigden & Moore (2018), and also shown to exist irrespective of the POLAR4 quintile in the current study? Examining the distribution of graduates across the POLAR4 quintiles in the current study had not explained this difference, and so further work would be required exploring other university, student and graduate characteristics and demographic profiling.

For example, it is known (Telhaj et al, 2015; Feng et al, 2017; Walker et al, 2018) that there is a positive relationship between achieving 'good honours' (a First Class or Upper Second Class degree), university selectivity and securing graduate employment. Furthermore, certain demographics and characteristics, such as tariff on entry, age, gender and ethnicity, are correlated with class of degree achieved and academic outcomes (Richardson, 2018; Mountford-Zimdars et al, 2015; Naylor et al, 2004). Therefore further exploration of this literature and data might help to understand the highly skilled destinations gap between single and joint honours graduates, and why the gap is so much smaller at the Russell Group.

5. Conclusion and Future Work

The current study confirmed the previous work of Pigden & Moore (2017, 2018) in showing a negative highly skilled destinations gap between joint and single honours graduates, at the national level, updated to include the most recent two years of data available from the DLHE survey.

The current study also showed that at the national level, graduates who had come from the higher POLAR4 quintiles (more educationally advantaged at the point of admission to university), were more likely to be in a highly skilled destination post-graduation. This was true for both single and joint honours graduates, and demonstrated the lasting effect of educational advantage on individuals, even following a university education, at the national level.

However the impact of the type of university at which the graduate had studied was demonstrated in Table 5 and Table 6 and this highlighted that all Russell Group graduates, irrespective of their POLAR4 quintile, were far more likely to be in a highly skilled destination than single or joint honours graduates of Post-92 universities. Even the lowest quintile graduates of the Russell Group had greater rates of highly skilled destination, than the highest quintile from Post-92 universities, for both single and joint honours graduates. Our study could not explain this difference, and other student characteristics such as tariff on entry, subjects studied, gender, age and ethnicity might all contribute to this finding.

The gap between single and joint honours graduates decreased the higher the quintile, at the national level. However in both the Russell Group and Post-92 universities, the gap remained fairly constant, irrespective of the quintile, albeit with a much smaller gap at the Russell Group than the Post-92 universities.

This was thought to be because the proportion of quintile 5 joint honours graduates from the Russell Group was disproportionately high (Table 6). The joint honours upper POLAR4 quintiles also represented a larger footprint within the Russell Group overall undergraduate population (Table 110), although the impact of this last point is unclear without further exploration.

At Post-92 universities, the admissions profile was more even across the quintiles than at the Russell Group, although still with a preponderance of upper POLAR4 quintiles (Table 98). However there was an even spread of joint honours graduates across the POLAR4 quintiles at Post-92 universities (Table 121), in contrast to the Russell Group where there was an increase in the proportion of joint honours graduates the higher the quintile.

That these educationally advantaged joint honours graduates at the Russell Group, have had more of a footprint at the UK's top performing, highly selective universities would be an interesting point to explore in future work, and may assist in explaining the relative success of the Russell Group joint honours graduates. It may be that the graduates' confidence levels are higher, given the relatively high prevalence of higher quintiles for this type of Honours degree at the Russell Group.

Future work will also seek to understand why a higher proportion of joint honours graduates hail from the upper quintiles, why the Russell Group joint honours graduates were more disproportionately from the upper POLAR4 quintiles, and why the joint honours upper POLAR4 quintiles represented such a larger proportion of the Russell Group overall undergraduate population. This may be because of differences in the careers advice and guidance provided in independent or higher educational advantaged schools or, say, differences in university marketing and admissions strategies.

Our study of POLAR4 quintiles could not explain the much smaller gap in the highly skilled destinations between single honours and joint honours graduates found in the Russell Group, compared with the Post-92 universities. Other student characteristics and demographic profiling, such as tariff on entry, subjects studied, age, gender and ethnicity could all be contributing factors, particularly in relation to the classification of honours degree achieved, and will also form the basis of future work.

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Table 1 Non-joint honours subjects

JACS Code	Principal Subject
A1	Pre-clinical Medicine
A2	Pre-clinical Dentistry
A9	Others in Medicine and Dentistry
B5	Ophthalmics
G02	Broadly based programmes in computer science (2011/12 only)
D1	Pre-clinical Veterinary Medicine
D2	Clinical Veterinary Medicine & Dentistry
D9	Others in Vet Sci, Ag & related subjects
H9	Others in Engineering
I5	Health Informatics
J1	Minerals Technology
K0	Architecture, Build & Plan: any area
K9	Others in Architecture, Build & Plan
W0	Creative Arts & Design: any area
A3	Clinical Medicine
A4	Clinical dentistry

DLHE year	Proportion of graduates	
	Single honours	Joint Honours
2011/12	89.24%	10.76%
2012/13	89.61%	10.39%
2013/14	90.22%	9.78%
2014/15	90.71%	9.29%
2015/16	91.17%	8.83%
2016/17	90.84%	9.16%

Table 2 Proportion of graduates; includes 'non-joint' subjects

Highly skilled destinations (TEF methodology)		
DLHE year	Single honours	Joint Honours
2011/12	64.30%	60.98%
2012/13	66.00%	63.60%
2013/14	68.29%	65.82%
2014/15	71.31%	67.78%
2015/16	73.20%	70.48%
2016/17	76.26%	73.55%

Table 3 Proportion of graduates in highly skilled destinations; excludes 'non-joint' subjects

Highly skilled destinations (TEF methodology)			
POLAR4	Single honours	Joint Honours	Difference
1	71.29%	65.98%	5.31%
2	72.22%	67.30%	4.92%
3	72.82%	68.88%	3.95%
4	72.94%	69.31%	3.64%
5	75.60%	73.63%	1.97%

Table 4 Proportion of graduates in highly skilled destinations by POLAR4 quintile; excludes ‘non-joint’ subjects

Highly skilled (TEF methodology)			
POLAR 4	Single honours	Joint Honours	Difference
1	78.59%	77.55%	1.04%
2	78.85%	76.23%	2.61%
3	79.33%	77.96%	1.37%
4	79.16%	76.61%	2.56%
5	80.04%	78.95%	1.09%

Table 5 Proportion in highly skilled destinations of the Russell Group population of graduates, by Honours type, split by POLAR4 quintile; excludes 'non-joint' subjects

Highly skilled (TEF methodology)			
POLAR 4	Single honours	Joint Honours	Difference
1	69.71%	62.73%	6.99%
2	70.14%	62.83%	7.31%
3	70.42%	62.52%	7.91%
4	69.82%	63.60%	6.22%
5	71.94%	65.36%	6.58%

Table 6 Proportion in highly skilled destinations of the Post-92 university population of graduates, by Honours type, split by POLAR4 quintile; excludes 'non-joint' subjects

POLAR 4	Proportion of national population			
	Russell Group		Post-92 Universities	
	Single honours	Joint Honours	Single honours	Joint Honours
1	13.30%	18.61%	67.28%	58.08%
2	15.84%	23.69%	63.60%	50.32%
3	18.68%	28.43%	59.32%	44.83%
4	22.41%	33.46%	55.09%	39.99%
5	33.46%	49.42%	43.89%	26.99%

Table 7 Proportion in each POLAR4 quintile of the overall national single and joint honours population for that quintile; showing the Russell Group and Post-92 Universities only

POLAR 4	Russell Group		Post-92 Universities	
	Single honours	Joint Honours	Single honours	Joint Honours
1	8,635	1,035	43,675	3,235
2	14,540	1,945	58,380	4,135
3	21,360	3,095	67,830	4,880
4	31,220	4,750	76,735	5,680
5	63,980	11,425	83,930	6,240

Table 8 Number in each POLAR4 quintile of the overall national single and joint honours population for that quintile; showing the Russell Group and Post-92 groups of universities only

POLAR4	Russell Group		Post-92 Universities		Total Population	
	Single honours	Joint Honours	Single honours	Joint Honours	Single honours	Joint Honours
1	5.94%	4.65%	13.19%	13.38%	10.53%	8.98%
2	10.18%	8.75%	17.64%	17.11%	15.01%	13.26%
3	15.14%	13.90%	20.51%	20.18%	18.84%	17.55%
4	22.32%	21.35%	23.20%	23.50%	23.13%	22.91%
5	46.42%	51.35%	25.46%	25.82%	32.49%	37.31%

Table 9 Proportion of graduates from the Russell Group and Post-92 universities by POLAR4 quintile; excludes 'non-joint' subjects

POLAR 4	Proportion	
	Single honours	Joint Honours
1	92.22%	7.78%
2	91.96%	8.04%
3	91.56%	8.44%
4	91.07%	8.93%
5	89.79%	10.21%

Table 10 Proportion by Honours type in a university population, by POLAR4 quintile; includes ‘non-joint’ subjects

POLAR 4	Proportion	
	Single honours	Joint Honours
1	90.06%	9.94%
2	89.20%	10.80%
3	88.54%	11.46%
4	88.12%	11.88%
5	86.51%	13.49%

Table 11 Proportion by Honours type in the Russell Group populations, by POLAR4 quintile; includes 'non-joint' subjects

POLAR 4	Proportion	
	Single honours	Joint Honours
1	93.12%	6.88%
2	93.40%	6.60%
3	93.31%	6.69%
4	93.13%	6.87%
5	93.12%	6.88%

Table 12 Proportion by Honours type in Post-92 universities populations, by POLAR4 quintile; includes 'non-joint' subjects